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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,780	10/24/2001	Yasuo Kitaoka	10873.826US01	3107

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EXAMINER

VY, HUNG T

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

1,5.

# Office Action Summary

Application No.

10/041,780

Applicant(s)

KITAOKA ET AL.

Examiner

Hung T Vy

Art Unit

2828

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. In response to the communications dated 10/24/2001, claims 1-22 are pending in this application as a result of the addition of claims 17-22.

### **Acknowledges**

2. Receipt is acknowledged of the following items from the Applicant.

Information Disclosure Statement (IDS) filed on 03/05/2002 and made of record as Paper No. 3.

### **Foreign Priority**

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 10/31/2000.

### **Specification**

4. The specification has been checked to the extent necessary to determine the presence of possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### **Claim Rejections - 35 USC § 112**

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, and 5, the phrase "fundamental light" renders the claim indefinite because it is not properly defined in the spec or the claims. What is the fundamental light?

The applicant does not provide the structure for the device, or the relationship between the elements in the device. The phrase "wherein the wavelength of the harmonic...a desired wavelength" renders the claim(s) indefinite because the applicant does not recite how the harmonic light is controlled in such a manner.

Regarding claims 8, and 13, the phrase "diffraction grating", "a cesium gas cell" renders the claim(s) indefinite because the applicant does not recite how the diffraction grating and a cesium gas cell work.

Claims 2- 4, and 6-22 depend from rejected claim 1, 5 thereby render these dependent claims indefinite.

### **Claim Rejections - 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 15,16 and 22 are rejected under 35 U. S. C. § 102 (b) as being anticipated by Kitaoka et al., U.S. patent No. 5,960,259.

Regarding claims 1-5, 15,16,21, and 22, Kitaoka et al. disclose a coherent light source comprising: fundamental light (34) having a first wavelength; and a wavelength converting device for converting (36) the wavelength of the fundamental light by half, the wavelength converting device (40) converting the fundamental light into harmonic light having a second wavelength (See column 2, line 1-17 and fig 17), wherein the wavelength of the harmonic light is controlled in such a manner that the wavelength of the fundamental light is detected and controlled to a desired wavelength (See column 7, line 22-39). The coherent light source, wherein the fundamental light is emitted from a semiconductor laser having a wavelength variable function, the semiconductor laser comprises an active region, a phase control region and a distributed Bragg reflection (DBR) region. (See column 7, line 22-39) and the desired wavelength is within a phase-

matching wavelength tolerance of the wavelength converting device, and a variation in wavelength of the fundamental light. With a change in operating current thereof is compensated by changing current to be input to the phase control region or the DBR region (See column 8, line 34-48).

Regarding claims 6, and 17, Kitaoka et al. disclose the coherent light source, wherein the wavelength of the fundamental light that has passed through the wavelength converting device is detected so as to be controlled to the desired wavelength (See column 7, line 23-39).

Regarding claim 14, Kitaoka et al. disclose the coherent light source, wherein the phase-matching wavelength of the wavelength converting device is varied by changing a refractive index of the wavelength converting device with electrooptic effect or temperature change (See column 4, line 1-8).

### **Claim Rejections - 35 U.S.C. § 103**

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7, and 18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kitaoka et al., U.S. patent No. 5,960,259 in view of Yamamoto, U.S. Patent No. 5,936,985.

Regarding claim 7, and 18, Kitaoka et al. disclose the coherent light source but Kitaoka et al. do not disclose separating the fundamental light and the harmonic light. However, Yamamoto discloses separating (splitter 27) the fundamental light and the harmonic light.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify having the splitter because those skilled in the art will recognize that such modification and variations can be made without departing from the spirit of the invention.

It would have been obvious to provide Kitaoka with the limitations as taught or suggested by Yamamoto.

9. Claims 8-12 and 19 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kitaoka et al., U.S. patent No. 5,960,259 in view of Imajuku, U.S. Patent No. 6,370,169.

Regarding claim 8-12 and 19, Kitaoka et al. disclose the coherent light source but Kitaoka et al. do not disclose a diffraction grating; and a photo-detector, wherein the photo-detector detects the fundamental light diffracted by light diffraction grating. However, Imajuku et al. disclose a diffraction grating, and a photo-detector (See column 17, line 37-59).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify having a diffraction grating, and a photo-detector because those skilled in the art will recognize that such modification and variations can be made without departing from the spirit of the invention.

It would have been obvious to provide Kitaoka with the limitations as taught or suggested by Imajuku et al.

10. Claims 13 and 20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kitaoka et al., U.S. patent No. 5,960,259 in view of Snyder, U.S. Patent No. 5,202,741 and further in view of Imajuku, U.S. Patent No. 6,370,169.

Regarding claims 13 and 20, Kitaoka et al. disclose the coherent source but Kitaoka et al do not disclose a cesium (Cs) gas cell and photo-detector. However, Imajuku discloses gas cell and a photo-detector (See column 1, line 36-47) and Snyder disclose the gas cell (22) is cesium (See column 4, line 42).

### **Citation of Pertinent References**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Kitaoka et al. disclose Optical Apparatus and Method for Producing the same, U.S. Patent No. 5,835,650.

The patent to Kitaoka et al. disclose optical Apparatus and Method for producing the Same, U.S. Patent No. 6,018,536.



### Conclusion


12. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung VY whose telephone number is (703) 605-0759. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul IP can be reached on (703) 308-3098. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Hung T. Vy  
Art Unit 2828

November 29, 2002

  
PAUL IP  
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